

Neotropical frog *Leptodactylus pentadactylus* eats scorpions

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Dietary examination of preserved frogs from Ecuador at the Genève Museum revealed the presence of scorpions in four specimens of *Leptodactylus pentadactylus*. This observation is of particular interest because it represents the first known case of frog predation on scorpions in the New World tropics.

Scorpion predators have been described in detail by POLIS et al. (1981) and McCORMICK & POLIS (1990). They include approximately 150 taxa, the majority of which are vertebrates. According to McCORMICK & POLIS (1990), vertebrate predators include birds (37 %), lizards (34 %), mammals (18 %), frogs and toads (6 %) and snakes (5 %). In their table of predators, POLIS et al. (1981) presented only seven species of anuran amphibians: *Bufo cognatus* (Oklahoma, U.S.A.), *B. compactilis* (Oklahoma, U.S.A.), *B. melanostictus* (Singapore), *B. regularis* (South Africa), *B. terrestris americanus* (Oklahoma, U.S.A.), *Pyxicephalus adspersus* (South Africa) and *Scaphiopus couchii* (southwestern U.S.A.).

In this note we identify a new amphibian predator of scorpions, the South American frog *Leptodactylus pentadactylus*. This is the first known case of this frog preying on scorpions, and the first one reported for South American species. During a review of the scorpions of Ecuador at the Genève Museum (Switzerland), the remains of single scorpions were found in the stomach contents of four adult specimens of the frog *L. pentadactylus*. Although most of the bodies had been digested, taxonomic identification was made possible by analyzing the more durable pedipalps and metasoma. In all four cases, the scorpions were adult females of *Tityus bastosi* Lourenço, 1984 (Buthidae), previously described from the Amazonian region of Ecuador. The frogs had been collected in the region of San Pablo, Napo Province in Ecuador. This new documentation of scorpion predation is of great interest because: (1) it represents the first known case of Neotropical frog preying on scorpions in the Amazon region; (2) all four scorpion specimens belonged to the same species; (3) all were found in the same predator species, suggesting that this frog may feed extensively on scorpions, and specifically on *Tityus bastosi*.

Tityus bastosi is a small scorpion ranging from 30 to 35 mm in length (LOURENÇO, 1992), whereas adult *L. pentadactylus* average about 85 mm in snout-vent length. When disturbed *T. bastosi* displays a temporary lethargic behavior, which possibly may have evolved in response to frog predation. Frogs typically feed on moving prey. If the first attack is unsuccessful, freezing behavior would be highly advantageous, since the frog may not easily distinguish the scorpion from its background. At least juvenile forms of several other species of scorpions from this region, such as *Tityus asthenes* Pocock, *T. silvestris* Pocock, *T. jussarae* Lourenço and *T. gasci* Lourenço (LOURENÇO, 1988), could also be prey for *L. pentadactylus*. Because scorpions and frogs are predominantly nocturnal, most of the predation probably occurs at night. Some tropical scorpions, such as *Tityus serrulatus* from Brazil, are extremely venomous and pose an important sanitary problem due to their lethal venom and habit of living in human communities (LOURENÇO & CUELLAR, 1994). With the alarming decline of amphibian populations worldwide (BARINAGA, 1990; PHILLIPS, 1990; WAKE et al., 1991), scorpions may be losing some of their most effective predators and effective means of population control. Urgent studies are needed to verify the amount of frog predation on scorpions, and to assess the status of frog populations in the neotropics.

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